INFO-HAMS Digest Sat, 11 Nov 89 Volume 89 : Issue 869

Today's Topics:

airport security
DAK Catalog Scanner.
Third Party Traffic, MM net and BARF get letters from FCC
Tuning dipoles and antennas.

Date: 11 Nov 89 20:26:51 GMT
From: ka9q.bellcore.com!karn@bellcore.com (Phil Karn)
Subject: airport security

I'm a fairly frequent flyer, and I almost always have an HT (an Icom IC-32AT) in my carry-on briefcase.

My experience with US airport security has been VERY consistent. If I remember to disconnect the antenna from the radio, no problem. But if I leave the antenna on the radio, it looks sufficiently suspicious that the X-ray operator invariably asks about it. Usually they want to see it, but some times they'll ask "Is that a radio?" and they're satisfied with a verbal answer.

Things are quite different at non-US airports. I usually bury my HT (if I carry it at all) in my checked luggage. Cameras loaded with film are the real problem; even though ICAO member countries are required to provide hand inspection on request, I've had problems. In Montreal they made me take a picture of the floor to prove that my camera was "real". Most recently in Stockholm the cretin at the security checkpoint insisted that my camera go through the X-ray machine, even after a heated argument in which I mentioned the ICAO rule, took the lens off to show that nothing was hidden, and complained that my camera was loaded with high speed (ASA 1000) film.

I wonder if there's any place one can obtain some sort of official-looking document that describes the ICAO rule about hand-searching in as many languages as possible.

Phil

Date: 11 Nov 89 13:24:39 GMT
From: att!cbnewsc!parnass@ucbvax.Berkeley.EDU (Bob Parnass, AJ9S)
Subject: DAK Catalog Scanner.

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In article <1232@mipos3.intel.com>, jmasters@pcocd2.intel.com (Justin Masters ~) writes:

> I received my DAK catalog yesterday, and saw a scanner for sale. $299 for (I
> can't remember) a Bearcat 800XLT (?). Is this a decent scanner?

The 800xlt has 40 channels in two banks of 20 each. DAK is no bargain here. I think the Uniden/Bearcat 760xlt 100 channel scanner with service search and wider frequency coverage is a better value for about $279 from Grove Enterprises (in Brasstown, NC).

I've owned both models -- two 760xlts, in fact, and I still use one daily. If you absolutely must buy an 800xlt, Grove's price is only $249. The best current model scanner is probably still the Radio Shack PRO-2005, which Grove lists for $389.

Attached is my 'dated' review of the 800xlt, written long before the 760xlt era. In summary,

> "The 800XLT's tendency to overload on strong signals and awkward squelch action detract from an otherwise good performance."

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OWNER'S REPORT: UNIDEN/BEARCAT 800XLT SCANNER

Bob Parnass, AJ9S

Manufactured in Taiwan, the 800XLT is the first programmable Uniden/Bearcat scanner to cover a portion of the 800 MHz band. Covering 40 channels in 2 banks the 800XLT is specified to receive in the following ranges:

TABLE 1. 800XLT Frequency Coverage

29	-	54	fm
118	-	135.975	am
136	-	174	fm
406	-	512	fm
806	-	912	fm

Only a portion of the new 902-928 MHz ham band is covered.

Differs From Past Models

There are several differences between this scanner and its Bearcat predecessors.

- There is only a single scan/search speed: fast!

- 800XLT channel banks contain 20 channels, not 10 as in previous models. Although we should be thankful for the inclusion of a channel bank feature, doubling the number of channels in a bank is a step backwards.

- Scan delay, channel lockout, and priority enable are indicated by separate, colored LEDs rather than the numeric display, making a colorful light show.

- Both the selectable scan delay and the priority sampling period are 3 seconds vs. 2 seconds in the older scanners. Although a matter of personal preference, I like the 3 second scan delay, but would opt for a 1 or 2 second priority sampling period.

- Despite claims on the 800XLT box to the contrary, a 2 digit channel counter is displayed while scanning, as in the BC350, rather than "rolling zeroes" of the BC210/220/250/300. This is unfortunate, as rolling

zeroes make it easier to discern what channels are

locked out from scanning without having to step through each one manually.

- The keyboard has a good feel, although quite different from the "chicklet" keyboards on Bearcat 250 and 300 scanners. Keys travel further, with less of a positive click. The 800XLT keyboard is much easier to read, as each key has its function printed right on the keytop, rather than labeled above it on an inlay.

- The 800XLT seems to lack "window detection" circuitry, so the scanner may stop prematurely (off frequency) in the SEARCH mode.

- There is no date of manufacture stamped on the cabinet.

- Mobile DC power cord is optional, but is supplied as standard equipment with other Bearcat scanners.

Inside Appearance Pleasing

The inside of the 800XLT consists of 3 circuit boards:

1. a main receiver board, containing vhf/uhf front ends, IF stages, audio amplifier,

2. a feature board, containing microprocessor and keyboard logic, and

3. an 800 MHz front end board, which uses surface mount components.

The boards appear very neat, and it is obvious that computer aided design and automated component insertion techniques were used. What a welcome change from the chaos inside a hand assembled BC250!

No schematic diagram is furnished. Whereas the identity of many of the ICs in earlier Bearcat scanners was obscured by the use of "house numbers", the ICs in my 800XLT are clearly marked with their original designations (e.g. National LM382). This makes repair easier, as one may obtain parts from several sources rather than being forced to buy from Uniden.

Side-by-Side Performance Comparison

Side-by-side tests were performed, switching a Butternut SC3000 tri-band antenna at 20 feet among 3 scanners: the 800XLT, a new Bearcat 260, and an old Bearcat 300 workhorse. The test equipment used was a pair of human ears, which we all use when scanning.

As the following table shows, the 800XLT was more sensitive on some frequencies, but suffered much more overload from strong signals. This is important if the 800XLT will be used with an outdoor antenna. The 800XLT had fewer annoying birdies than the other models tested.

TABLE 2. Performance of Bearcat 800XLT vs. 260 vs. 300

Band	Bearcat 800XLT	Bearcat 260	Bearcat 300
30-37 MHz	more sensitive	more sensitive	less sensitive
	weak birdies	moderate birdies	moderate birdies
	overloaded by paging, police	no overload detected	no overload detected

	mobile phones		
37-50 MHz	equally sensitive overloaded by paging, police mobile phones	equally sensitive no overload detected	equally sensitive no overload detected
vhf aircraft	more sensitive	N/A	less sensitive
vhf-hi	slightly more sensitive overloaded by paging heard 162.55 wx on 147.19 and elsewhere	slightly more sensitive no overload detected	slightly less sensitive no overload detected
uhf	more sensitive overloaded by paging	less sensitive no overload detected	less sensitive no overload detected

On the 800 MHz band, several police, business and cellular telephone stations were received using the supplied 3" antenna. Clear reception of a repeater used to dispatch Chicago Tribune photographers was possible from 50 miles distant.

The 800XLT audio output is clean and strong, with little synthesizer whine.

Early Problem Fixed: Memory Loss

My 800XLT lost its memory contents when unplugged from 117VAC, even though loaded with a fresh pair of alkaline AA batteries. The problem was traced to a metal contact, installed backwards in the battery holder. Repair required desoldering a red wire, repositioning the contact, then resoldering the wire. No further memory problems have been encountered.

Too Much Hysteresis in Squelch

There is too much "free play" in the stock 800XLT squelch control, the same affliction designed into Radio Shack scanners. The remedy consists of replacing the 860K ohm resistor on pin 14 of the MC3359P IC with a 2.2M ohm resistor.

Not As Selective as Older Bearcats

At -55 dB @ +- 25 KHz, the 800XLT IF selectivity is not as good as the BC350 and BC300, which are rated at -60 dB @ +- 25 KHz. The wider selectivity causes the scanner to stop prematurely in the SEARCH mode, and makes it difficult to determine, for example, if a station is transmitting on 855.0250 as opposed to 855.0125 MHz.

Since the 800XLT tunes in 12.5 KHz steps on the 800 MHz band, the wider selectivity is handy when scanning telephone cell sites, which are on channels spaced on 30 KHz apart.

Overall Evaluation

The 800XLT is the most conventional and easiest to operate of the new 800 MHz-capable scanners. It is plagued neither with the slow scan/search rate of the Regency MX7000, the low audio output of the MX4000, nor the unfriendliness of the Yaesu scanning algorithms.

The 800XLT's tendency to overload on strong signals and awkward squelch action detract from an otherwise good performance.

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Bob Parnass, AJ9S - AT&T Bell Laboratories - att!ihuxz!parnass (312)979-5414

Date: 11 Nov 89 20:00:27 GMT
From: ka9q.bellcore.com!karn@bellcore.com (Phil Karn)
Subject: Third Party Traffic, MM net and BARF get letters from FCC

>In article <8910310803.AA27197@ucbvax.Berkeley.EDU> 702WFG@SCRVMSYS.BITNET (bill gunshannon) writes:
>>But today things are different. Today you can call anywhere in the world
>>from the comfort of your living room using the telephone....

Yes, things today are different -- but in another, far more important way: it is no longer US government policy to protect the monopoly of a single large telecommunications carrier (i.e., AT&T). Given the divestiture of AT&T and the radical changes in US telecommunications policy that have since led to wide-open competition in domestic telecommunications, I find it VERY hard to understand how the use of an amateur phone patch to avoid domestic toll charges could somehow be considered "illegal".

Of course, there are caveats here -- the communication has to be otherwise suitable for amateur radio transmission (no business use, no obscenity, etc) and it must be between points in the US; international third-party traffic rules still apply. But there is absolutely NO reason not to use your local autopatch merely because a cellular company *could* have carried your traffic.

Phil

Date: 10 Nov 89 16:35:42 GMT
From: philmtl!atha!aunro!adec23!mark@uunet.uu.net (Mark Salyzyn)
Subject: Tuning dipoles and antennas.

In article <1260002@hpmwtlb.HP.COM>, timb@hpmwtd.HP.COM (Tim Bagwell) writes:
> It is not necessary to have a resonant antenna to efficiently radiate energy.
True, but resonant antenna has the remarkable ability of NOT creating
cancelling fields. This is like putting energy into pushing as well as pulling.
I have a perfect match to my G5RV on 10M, but its 32M length is no match for
radiation efficiency to my 2:1 matched 5/8 wave 6M long antenna. Granted 1/8
of a wavelength of my 5/8 is cancelling some of the field, but the G5RV
cancels every 10M leaving only about 4M of radiating section with a heluva lot
of loading in between doing nothing.

> If an antenna is matched to the source, regardless of how it is matched,
> all the energy sent down the transmission line is radiated.
Nope, some of it is heating the air :-{ cancelling itself out.

73 de VE6MGS,
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Ciao,
-- Mark Salyzyn @ alberta!adec23!mark

End of INFO-HAMS Digest V89 Issue #869
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